WHAT IS CLAIMED IS:

**1.** A grasping mechanism, comprising movably coupled arms that are structured to grasp an object, wherein the arms are movably coupled to each other such that the arms can move towards or away from each other along a first axis, and further wherein the arms are attached to a body that comprises a resilient coupling which allows the arms to move in a direction substantially perpendicular to the first axis.

**2.** The grasping mechanism of claim 1, wherein the grasping mechanism is structured to grasp the object between the arms.

**3.** The grasping mechanism of claim 1, wherein the resilient coupling allows the arms to move along a y-axis.

**4.** The grasping mechanism of claim 1, wherein the arms comprise a polished or coated surface that reduces friction between the object and the arms, relative to an unpolished or non-coated surface, when the object is grasped by the arms.

**5.** The grasping mechanism of claim 1, wherein the arms comprise one or more rollers that reduce friction between the object and the grasping mechanism, relative to arms that lack the rollers, when the object is grasped by the arms.

**6.** The grasping mechanism of claim 1, further comprising the object.

**7.** The grasping mechanism of claim 6, wherein the object is selected from the group consisting of: a plate, a sample plate, a micro-well plate, a reaction block, a reaction block carrier, a sample holder, a petri dish, a test tube, a vial, a crucible, a reaction vessel, a reaction flask, a semi conductor wafer, a CD, and a tray.

**8.** The grasping mechanism of claim 1, wherein at least one arm comprises a stop.

**9.** The grasping mechanism of claim 8, wherein the stop is structured to determine a y-axis position of the object.

**10.** The grasping mechanism of claim 9, wherein the y-axis position of the object is determined with an accuracy to within about 0.1 millimeters.

**11.** The grasping mechanism of claim 1, wherein an interface between the arms and the body comprises at least one spring, which spring resiliently couples the arms to the body.

**12.** The grasping mechanism of claim 11, wherein the interface comprises a sliding interface.

**13.** The grasping mechanism of claim 1, wherein one or more of the arms comprise at least one support surface and/or at least one height adjusting surface.

**14.** The grasping mechanism of claim 13, wherein each support surface is disposed between two height adjusting surfaces, which height adjusting surfaces are angled to push the object into contact with the support surface when the object is grasped.

**15.** The grasping mechanism of claim 13, wherein the support surface and the height adjusting surface form a channel to grasp the object.

**16.** The grasping mechanism of claim 13, wherein the support surface comprises a substantially horizontal surface to support the object and the height adjusting surface comprises an angled surface that intersects with the substantially horizontal surface, which angled surface pushes the object into contact with the substantially horizontal surface when the arms grasp the object.

**17.** The grasping mechanism of claim 13, wherein at least one of the arms comprise a pivot member, which pivot member comprises the support surface and the height adjusting surface.

**18.** The grasping mechanism of claim 17, wherein the pivot member is resiliently coupled to the arm.

**19.** The grasping mechanism of claim 18, wherein the arm further comprises a stop that is resiliently coupled to the arm.

**20.** The grasping mechanism of claim 13, wherein the support surface determines an x-axis position of the object and the height adjusting surface determines a z-axis position of the object when the arms grasp the object.

**21.** The grasping mechanism of claim 20, wherein the x-axis and z-axis positions of the object are determined with an accuracy to within about 0.1 millimeters.

**22.** The grasping mechanism of claim 1, wherein the grasping mechanism is movably connected to a boom, which boom is movably connected to a base.

**23.** The grasping mechanism of claim 22, wherein the boom rotates about 360 degrees.

**24.** The grasping mechanism of claim 22, wherein the boom and the base comprise a robot.

**25.** The grasping mechanism of claim 22, wherein the boom moves vertically and horizontally.

**26.** The grasping mechanism of claim 25, wherein the boom extends and retracts.

**27.** The grasping mechanism of claim 22, further comprising at least one controller operably connected to the grasping mechanism, which controller controls movement of the grasping mechanism.

**28.** The grasping mechanism of claim 27, wherein the controller further controls movement of the boom.

**29.** The grasping mechanism of claim 28, wherein the controller comprises at least one logic device having one or more logic instructions that direct the boom to:

contact the object with the grasping mechanism such that the object is pushed against a push surface by the stops, whereby the resilient coupling allows the arms to reversibly recede from an initial position; and

grasp at least a section of the object with the arms, after which the arms advance at least substantially back to the initial position.

**30.** The grasping mechanism of claim 29, wherein the arms each comprise a channel and wherein the logic instructions further direct the grasping

mechanism to partially close prior to the contacting step to position the section of the object at least partially within the channel.

**31.** The grasping mechanism of claim 29, wherein the logic instructions further direct the boom to remove the object from a first position and place the object at a second position.

**32.** The grasping mechanism of claim 27, further comprising at least one sensor that communicates with the controller to determine a location of the grasping mechanism relative to the object.

**33.** The grasping mechanism of claim 32, wherein the sensor is selected from the group consisting of: an optical sensor, a photoelectric sensor, an infrared sensor, a position sensor, a laser distance sensor, and a magnetic sensor.

**34.** The grasping mechanism of claim 22, further comprising a deflectable member that deflectively couples the grasping mechanism to the boom, which deflectable member deflects when the grasping mechanism contacts the object or another item with a force greater than a preset force.

**35.** The grasping mechanism of claim 34, wherein the deflectable member comprises a breakaway.

**36.** A gripper apparatus, comprising:

at least one robot comprising a boom;

at least one grasping mechanism comprising movably coupled arms that are structured to grasp an object, wherein the grasping mechanism is resiliently coupled to the boom by a resilient coupling; and,

at least one controller operably connected to at least the grasping mechanism, which controller controls movement of the grasping mechanism.

**37.** The gripper apparatus of claim 36, wherein the grasping mechanism comprises two arms.

**38.** The gripper apparatus of claim 36, wherein the grasping mechanism is structured to grasp the object between the arms.

**39.** The gripper apparatus of claim 36, wherein the controller is operably connected to the robot and further controls movement of the robot.

**40.** The gripper apparatus of claim 36, wherein the boom moves vertically and horizontally.

**41.** The gripper apparatus of claim 40, wherein the boom extends and retracts.

**42.** The gripper apparatus of claim 36, wherein one or more of the arms comprise at least one support surface and at least one height adjusting surface.

**43.** The gripper apparatus of claim 42, wherein each support surface is disposed between two height adjusting surfaces, which height adjusting surfaces are angled to push the object into contact with the support surface when the object is grasped.

**44.** The gripper apparatus of claim 42, wherein the support surface comprises a substantially horizontal surface to support the object and the height adjusting surface comprises an angled surface that intersects with the substantially horizontal surface, which angled surface pushes the object into contact with the substantially horizontal surface when the arms grasp the object.

**45.** The gripper apparatus of claim 42, wherein one or more of the arms comprise a pivot member, which pivot member comprises the support surface and the height adjusting surface.

**46.** The gripper apparatus of claim 45, wherein the pivot member is resiliently coupled to the arms.

**47.** The gripper apparatus of claim 36, wherein the resilient coupling between the grasping mechanism and the boom comprises at least one spring, which spring resiliently couples the grasping mechanism to the boom.

**48.** The gripper apparatus of claim 47, wherein the resilient coupling comprises a sliding interface.

**49.** The gripper apparatus of claim 36, wherein at least one of the arms further comprises a stop and the controller comprises at least one logic device having one or more logic instructions that direct the gripper apparatus to:

contact the object with the grasping mechanism such that the object is pushed against a push surface by the stop, whereby the resilient coupling allows the arms to reversibly recede from an initial position; and

grasp at least a section of the object with the arms, after which the arms advance at least substantially back to the initial position.

**50.** The gripper apparatus of claim 49, wherein the logic instructions further direct the gripper apparatus to remove the object from a first position and place the object at a second position.

**51.** The gripper apparatus of claim 36, further comprising a deflectable member that deflectively couples the grasping mechanism to the boom, which deflectable member deflects when the grasping mechanism contacts an item with a force greater than a preset force.

**52.** The gripper apparatus of claim 51, wherein the deflectable member comprises a breakaway.

**53.** A gripper apparatus, comprising:

a grasping mechanism comprising movably coupled arms that are structured to grasp an object, wherein at least one arm comprises a stop and a pivot member having:

a) a support surface to support the object; and

b) a height adjusting surface that pushes the object into contact with the support surface;

such that when the arms grasp the object the support surface and the height adjusting surface determine at least a z-axis position of the object;

a deflectable member that deflectively couples the grasping mechanism to a boom;

a controller coupled to the grasping mechanism, which controller controls movement of the grasping mechanism; and,

at least one push surface against which the gripper apparatus pushes the object into contact with the stop to determine a y-axis position of the object.

**54.** A method of grasping an object, the method comprising:

providing a gripper apparatus that comprises a controller coupled grasping mechanism having movably coupled arms that are structured to grasp an object, wherein at least one arm comprises a stop, and wherein at least two grasping mechanism components are resiliently coupled to each other by a resilient coupling;

contacting the object such that the object is pushed against a push surface by the stop, whereby the resilient coupling allows the arms to reversibly recede from an initial position; and,

grasping at least a section of the object with the arms, after which the arms advance at least substantially back to the initial position.

**55.** The method of claim 54, further comprising removing the object from a first position and placing the object at a second position.